

Description

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DETAILED DESCRIPTION

[0001] The present invention relates generally to the field of technology involving shielding for protecting against encroachment and high impact force projectiles. More particularly, the invention relates to an aircraft stationary, interior protective, vertical enclosing wall system that is located in the fuselage forward section, behind the cockpit flight deck and in front of the passenger's compartment. The wall, in architecture, protective, enclosing, or dividing vertical structure with supporting titanium studding on that which is secured, titanium sheets and Kevlar with a material called spectra uniformly spaced on it periphery. The titanium studding spaced 16"o/c, shall be connected above and on the sides to the aircrafts fuselage members and 1ft. below to the floor supporting members. The design employs a multi-layer approach using Kevlar and a material called spectra, and titanium to provide strength and lightweight. The stationary dividing wall has an esti-

mated density of $4 \text{ gm/cm}^3 - 260 \text{ lb/ft}^3$. This permanent wall system shall extend perpendicular to the longitudinal cabin direction from the aircraft roof supporting members and 1 ft. below the floor supporting members. Its thickness is determined by the material, height, and stress.

The vertical studding, and its enclosed protective wall system, may be of titanium or aluminum or of lightweight alloy steel in combination with one or more of the preceding materials. The wall serves two functions; (1) the wall is used as a support, for the floor and roof. (2) It totally separates and gives maximum protection, to the pilots in the cockpit flight deck, against any person or persons, in the passengers compartment of the aircraft, from encroaching and commandeering the aircraft. Layers of bulletproof materials such as a nonwoven mix of Kevlar and a material called Spectra, a high performance polyethylene material that is both stiff and light, and using adhesive designed to provides a hermetic, semi-elastic bond attaches the Kevlar and a material called spectra to the titanium would cover the periphery of the titanium wall system, to ensure that if a bullet was fired from a weapon it wouldn't penetrate, deflect or ricochet off the wall and strike someone. The concept of protective shielding for resisting or

repelling the penetration of a bullet or similar high impact force projectile is well known in the garment known as a bullet-proof vest which is often worn by law enforcement security personnel. Easy access to commercial pilots by the flying public will be eliminated with the proper stationary dividing wall installation. Furthermore, this stationary dividing wall has been designed to provide resistance to substantial arms fire including Class 1 through Class 5 threats. Pilots and passengers would be totally isolated from each other and would use separate entrance / exit doors. There shall be two dividing wall designs, one for new aircraft installation, one for existing aircraft installation. Generally, the dividing wall shall be attached to the aircraft fuselage frame with standard connectors specifically designed for aircraft erection. Since the dividing wall is fixed, cockpit flight deck cabin access modifications are required. Additional modifications will be necessary for food and for restrooms. The cockpit flight deck cabin of new aircraft will be designed to incorporate the new layout. Each dividing wall shall be designed and custom built to fit exactly within a specified aircraft.